

Bmk. No. A-39
Chief Electrician, WJ-2805-10

MAJOR DUTIES

Serves as Chief Electrician on an automated hopper dredge. Typical equipment aboard the dredge consists of approximately 250 separate units ranging from High Voltage AC to Control Voltage DC. Auxiliaries and other electrical equipment typically include switchboards, rheostats, relays, circuit breakers, voltage regulators, dredge pump speed control system, telemotor steering system, engineer order telegraph, remote controlled searchlights, deck machinery motors, battery charging equipment, storage battery banks, DC to AC converters, balance sets, ventilation systems, radio telephone, miscellaneous lighting equipment, indicating and recording instruments, and several miles of lead and armored cables and electrical wiring. Enforces all applicable safety regulations to minimize injury to personnel and damage to property.

1. Responsible for the maintenance, adjustment, and minor and major repair of electrical machinery and equipment enumerated above, including inspection, testing, cleaning, overhauling, and replacement of defective parts. Personally performs the most difficult, complex, and important work. Uses all general electrician's hand tools and testing equipment, operates power machines, and performs electrical machinist work. Works from shop drawings, electrical diagrams, and specifications. Rewinds the smaller armatures. Replaces bearings, bushings, and parts of motors, generators, and sub-assemblies.

2. Prepares itemized schedules of electrical repairs to be performed during the annual overhaul, showing work to be done, materials, and parts required and man hour and cost estimates. Personally supervises completion of this work or inspects the work of contractor forces for conformance with plans and specifications. Keeps the Chief Engineer informed on status of electrical equipment and repairs, and advises the Chief Engineer on electrical matters. Furnishes lists with technical descriptions for requisitioning of electrical parts, supplies, and equipment; and maintains stock of repair parts and electrical supplies.

3. Plans and lays out work for 2 to 5 subordinate electricians, issuing specific or general instructions as required. Personally performs and/or directs the more responsible tasks involved in emergencies and major repairs.

4. Is responsible for the maintenance of electronic dredging equipment up to the level prescribed in the appropriate shipboard maintenance manuals. Coordinates higher echelon repair with appropriate shore-based activities. Assists shore-based personnel in performing higher echelon repairs as required.

Performs other duties as assigned.

SKILLS AND KNOWLEDGES

Knowledge and application of electrical principles, materials, and safety standards. Knowledge of the make up, operation, and installation of a variety of electrical systems, circuits, equipment, and controls aboard the vessel and the ability to install them in ways that insure proper and safe operation. Must understand the principles of operation of an automated engine room monitoring system, the care and maintenance of the system. Skill in planning and laying out work, tracing hard-to-locate defects or problems, and completing repairs and installations is required. The ability to interpret and apply plans,

blueprints, wiring diagrams and engineering drawings, and use of mathematical formulas basic to the trade is required. Incumbent also needs to possess skill in the use of handtools and a wide variety of test equipment.

RESPONSIBILITY

Works under general supervision of the Chief Engineer. Responsible for the maintenance, proper operating conditions, installation and repair of all electrical machinery and equipment of the dredge. Receives instructions in terms of overall job requirements, objectives to be attained, procedures to be followed, and schedules to be maintained. Work receives spot check inspection or review to determine adequacy of production and end results obtained, proper upkeep of electrical equipment, and adherence to established practices and procedures. Technically responsible for appropriate application of electrical principles, trade techniques, and procedures. Overall performance is evaluated in terms of performance appraisal standards established by supervisor.

WORKING CONDITIONS

Work is performed primarily in closed areas with some work outside. Much time is spent in or adjacent to the engine room area with its attendant noise, heat, fumes, etc. Works in very close places and in awkward positions. Employee is subject to the usual hazards, involving shock, strain, burns, cuts, falling from ladders, fumes and heat while working in confined quarters. Incumbent is exposed to the effects of paints, acids, and solvents.

PHYSICAL EFFORT

Makes repairs and installations from ladders, scaffolding, and platforms, and where the parts of the system worked on are in hard-to-reach places. Duties require long periods of standing, stooping, bending, kneeling, climbing, and working in tiring and uncomfortable positions. Incumbent is required to exert moderate to heavy physical effort in handling equipment. Frequently lifts, carries, and sets up tools and equipment. Incumbent must possess color perception in order to perform troubleshooting and repair work on the full range of equipment.